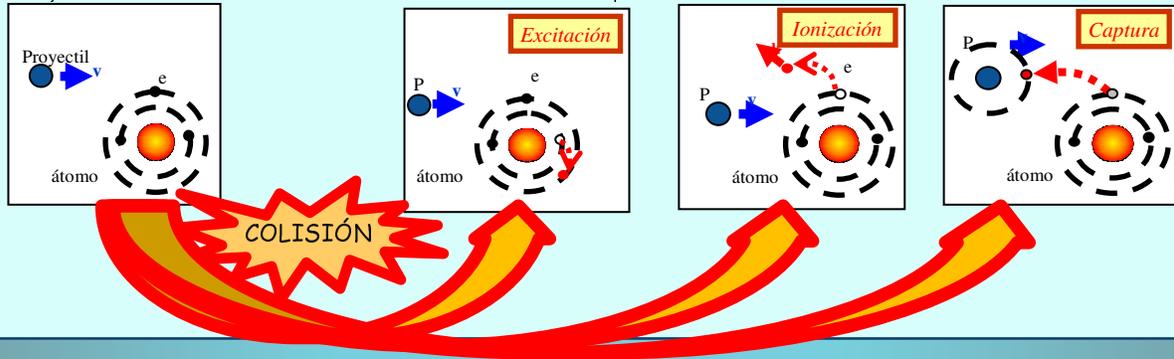


GRUPO DE COLISIONES ATÓMICAS

Jorge Miraglia, María Silvia Gravielle, Darío Mitnik, Diego Arbó, Claudia Montanari, Claudio Archubi, Mario Acuña

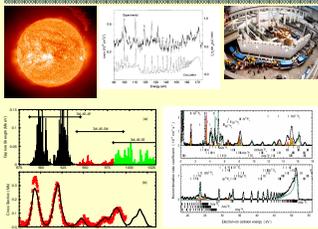
Son los procesos que ocurren cuando **PROYECTILES ATÓMICOS** - átomos, iones (*partículas cargadas*), electrones o aún la luz (*fotones*) - chocan con la materia. Los mecanismos fundamentales que intervienen son :



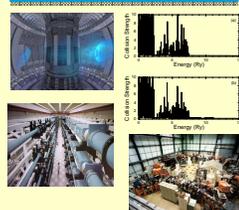
Estos son algunos de los temas que estamos investigando AHORA ...

Cálculos y simulaciones de colisiones

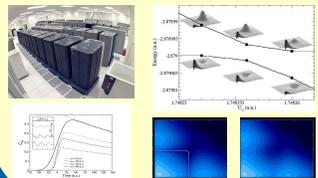
Cálculo de procesos importantes para Astrofísica



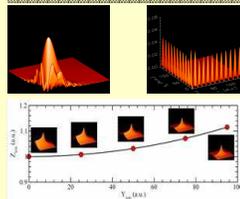
Cálculo de procesos importantes para Fusión



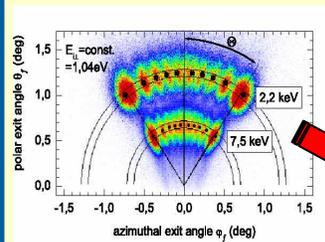
Cálculos con Supercomputadoras



Simulaciones de evolución temporal cuántica

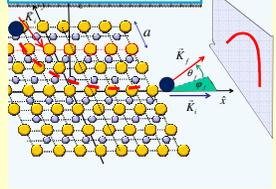
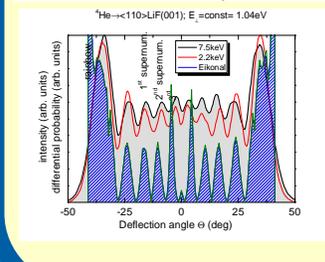


Interferencia cuántica en colisiones con superficies

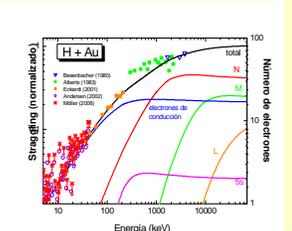
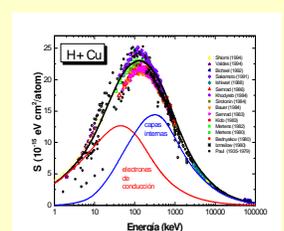
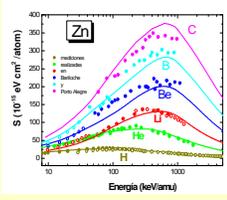
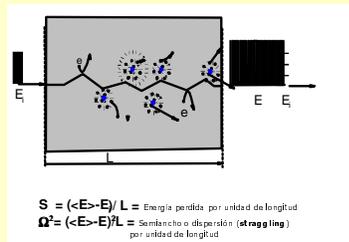


PHYSICAL REVIEW LETTERS
105, 043201 (2010)
Diffraction of Fast Atoms Propagating Along Surfaces from a LiF(001) Surface
A. Khrushch, S. Mikhlin, and P. Brong
Institute for Physical Research, National Academy of Sciences of Belarus, Minsk 220072, Belarus
Received 27 October 2009; published 19 February 2010

Fenómeno inesperado:
 $\lambda = \frac{2\pi}{K} \ll a$

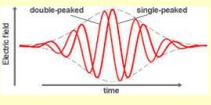


Pérdida de energía de iones



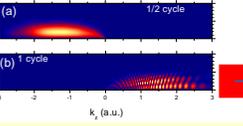
Interacción de la materia con pulsos láser cortos

Pulso láser ultracorto

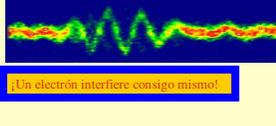


¡El attosegundo nos queda tan lejos de nuestra propia experiencia como la edad del Universo!

Experimento de la doble rendija temporal

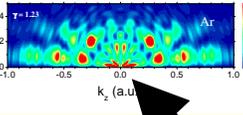


Osciloscopio de attosegundo

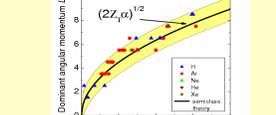


Un electrón interfiere consigo mismo!

Distribución de momento 2D



Ley Universal: momento angular dominante



Formación del "bouquet"